CLAIM AMENDMENTS:

1. (currently amended) A detector for detecting electrically neutral particles, having

a detector housing ~~(10)~~ which at least in certain regions is filled with a counting gas,

~~at least one~~ a multiplicity of converter devices ~~(22) which is~~ arranged in the detector housing ~~(10) and generates~~ for generating conversion products as a result of the absorption of the neutral particles which are to be detected, the conversion products generating electrically charged particles in the counting gas, each of said converter devices comprising a first conductive layer and a second conductive layer, which are electrically insulated from one another by an insulator layer arranged between the first conductive layer and the second conductive layer, and at least one converter layer arranged on at least one of the first conductive layer and the second conductive layer to define an outermost part of the respective converter device,

at least one readout device ~~(19)~~ for detecting the electrically charged particles,

at least one electrical drift field device ~~(18)~~ for generating an electrical drift field for the electrically charged particles in at least a region of the volume of the counting gas in such a manner that at least some of the electrically charged particles drift toward the readout device ~~(19)~~, the converter device ~~(22)~~ being of charge-transparent design and being arranged in the detector housing ~~(10)~~ in such a manner that the drift field passes through at least part of ~~this~~ the converter device.

2. (currently amended) The detector as claimed in claim 1, in which the converter device ~~(22)~~ has a multiplicity of passages ~~(32)~~, for the electrically charged particles.

3. (currently amended) The detector as claimed in claim 2, in which the passages ~~(32)~~ have a minimum diameter of between 10 μm and 1000 μm, and a minimum spacing of 10 μm to 500 μm.

4. (canceled).

5. (currently amended) The detector as claimed in claim 1, in which a region of the converter device ~~(22)~~ which is active in the conversion ~~is of large-area design and~~ is arranged substantially perpendicularly in the drift field.

6. (currently amended) The detector as claimed in claim 1, in which the device ~~(18)~~ for generating a drift field has a ~~large-area~~ structured drift electrode ~~(18)~~ to generate the drift field between the drift electrode and the readout device ~~(19)~~.

7. (canceled).

8. (currently amended) The detector as claimed in claim ~~7~~ 1, in which the first conductive layer ~~(28)~~ and the second conductive layer ~~(30)~~ are electrically connected to a device for generating a converter field.

9. (currently amended) The detector as claimed in claim 8, in which the converter layer ~~(24)~~ is a neutron converter layer which contains at least one of lithium-6, boron-10, gadolinium-155, gadolinium-157 and uranium-235.

10. (currently amended) The detector as claimed in claim 9, in which the converter layer ~~(24)~~ has a layer thickness of from 0.1 μm to 10 μm ~~for a neutron converter layer substantially consisting of boron-10, between 0.5 μm and 3 μm~~, the first and second

conductive layers have a layer thickness of from 0.1 μm to 20 μm, and the insulator layer has a layer thickness of from 10 μm to 500 μm.

11. (currently amended) A converter device ~~(22)~~ for a detector for detecting electrically neutral particles, having a first conductive layer ~~(28)~~ and a second conductive layer ~~(30)~~, which are electrically insulated from one another by an insulator layer ~~(26)~~ arranged between them, and at least one solid converter layer ~~(24)~~ which is arranged on at least one of the first conductive layer ~~(28)~~ and the second conductive layer ~~(30)~~, the converter device ~~(22)~~ having a multiplicity of passages ~~(32)~~ for electrically charged particles.

12. (currently amended) The converter device as claimed in claim 11, ~~which~~ said at least one solid converter layer contains a neutron converter material selected from the group consisting of lithium-6, boron-10, gadolinium-155, gadolinium-157 and uranium-235.

13. (currently amended) A method for producing a converter ~~device (22)~~ for a detector for detecting electrically neutral particles comprising the following steps:

providing ~~an~~ a plurality of insulator layers ~~(26) which is~~, each said insulator layer being arranged between two electrically conductive layers ~~(28, 30)~~, so that the electrically conductive layers ~~(28, 30)~~ are electrically insulated from one another, ~~and~~ each said insulator layer and the electrically conductive layers adjacent thereto defining a converter device;

providing a converter layer ~~(24)~~ arranged on at least one of the conductive layers of each said converter device; and

arranging a plurality of the converter devices in a cascade form.

14. (currently amended) A detection method for detecting electrically neutral particles comprising the following steps:

trapping the electrically neutral particles which are to be detected using ~~at least one~~ a plurality of converter devices ~~(22) which generates~~ arranged in a cascade form for generating conversion products when the neutral particles are absorbed, each said converter device having an insulator arranged between two electrically conductive layers so that the electrically conductive layers are electrically insulated from one another, a converter layer being provided on at least one of the conductive layers of each said converter device;

generating electrically charged particles in a counting gas by means of the conversion products;

diverting the electrically charged particles in an electrical drift field to a readout device ~~(19)~~, at least some of the electrically charged particles being passed through the ~~charge-transparent~~ converter devices ~~(22)~~ through a multiplicity of passages ~~(32)~~, which are arranged in the form of a matrix, in the converter devices ~~(22)~~; and

detecting the electrically charged particles in the readout device ~~(19)~~.